ABSTRACT OF THE DISCLOSURE

A method of offset voltage control for pulse mode ionization systems is provided wherein the ionization system has positive and negative power supplies. The duty cycle and overlap of outputs of the positive and negative power supplies are controlled, and an overlap that achieves a desired offset voltage is determined. The offset voltage and the corresponding overlap are stored in memory. The duty cycle and overlap of the outputs of the positive and negative power supplies are controlled to achieve the desired offset voltage based upon the stored offset voltage comparison.